PURE DIGITAL
FIBERLINK®

2 Channel/4 Channel Video Multiplexer

USER'S MANUAL

7030 and 7040 Series

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GENERAL INFORMATION

Introduction

The Pure Digital Fiberlink® 7030 and 7040 Series transmit multiple channels of uncompressed composite video over a single fiber optic cable. The 7030 Series (2 channels video) and 7040 Series (4 channels video) provide 7 MHz bandwidth per video channel and are compatible with NTSC, PAL and SECAM video standards. Systems are offered for use with single mode or multimode fiber. With a wide operating temperature range, the systems are suitable for any indoor or protected outdoor environment.

Systems consist of two units (transmitter and receiver), each equipped with indicator LEDs to continuously indicate the presence of power and video signals. The system is available in box or card version. Card units fit within the model 6000A card cage.*

Technical Specifications

Model Part Numbering Configurations:

Unit Type	Part Number
Transmitter Box	7030/7040-BXY
Transmitter Card*	7030/7040-CXY
Receiver Box	7031/7041-BXY
Receiver Card*	7031/7041-CXY

*Card versions for the 7030 Series fill one slot in the model 6000A card cage. Card versions for the 7040 Series fill two slots.

X Values:
1 = 850 nm Multimode
3 = 1310 nm Multimode
7 = 1310 nm Single Mode
9 = 1550 nm Single Mode

Y Values:
S = ST connector
F = FCPC connector

Video

Bandwidth ..... 7 MHz (-3dB)
Input/Output Impedance ..... 75 Ohms
Input/Output Voltage ..... 1 Vp-p nom., 1.1 Vp-p max.
Differential Phase & Gain ..... 0.5° typical; 1.0% typical
Signal-to-Noise Ratio ..... 62 dB CCIR weighted
Signal Connectors ..... BNC

Optical

Operating Wavelength ..... 850 nm, 1310 nm, 1550 nm, MM/SM
Optical Fiber ..... 62.5/125 microns MM or
8-10/125 microns SM
Optical Connectors ..... ST or FCPC

Wavelength	Loss Budget (in dB)	Distance* (in km)
850 MM	0-20	0-.75
1310 MM	0-25	0-2
1310 SM	0-25	0-60
1550	0-25	0-80

**Note: Distance specifications are only approximate and are not guaranteed. Operating loss budget must not be exceeded.*

Miscellaneous

Operating Temp. Range ..... -35 to +75 degrees C
Operating Power ..... 9 to 24 Volts AC or DC@5 watts (max)

CAUTION! Some versions of the Pure Digital Fiberlink transmitter unit contain a solid state Laser Diode located within the optical connector. This device emits invisible infrared electromagnetic radiation which can be harmful to human eyes. The radiation from this optical connector, if viewed at close range without a fiber optic cable connected to the optical connector, may be of sufficient intensity to cause instantaneous damage to the retina of the eye. Direct viewing of this radiation should be avoided at all times.

INSTALLATION INSTRUCTIONS

Installation Procedure

The Pure Digital Fiberlink 7030 and 7040 Series transmission systems are normally preset for immediate use. There are indicator LEDs on the units for monitoring purposes. The following instructions describe the typical installation procedure and the function of the LED indicators.

1. Connect the fiber optic cable or cables between the two Pure Digital Fiberlink units.
2. Apply power to both Pure Digital Fiberlink units. For box versions using DC power connections, refer to Figure 1.

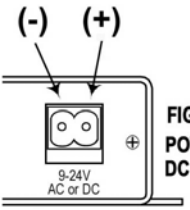

FIGURE1:
POWER CONNECTOR
DC INPUT POLARITY

3. When power is applied, the green POWER LED will light, indicating the presence of operating power. The green VIDEO LED(s) will give an indication as stated on the following page. Note that the rack card version will have an additional red LED to indicate the presence of an alarm condition (loss of video).
4. The system should now be operational.

Alarm Switch Settings (Transmitter; Card Version Only)

Switch Position	Alarm Indication	On	Off
1	Loss of Link	Enabled	Disabled
2	Loss of Video 1	Enabled	Disabled
3	Loss of Video 2	Enabled	Disabled
4	Loss of Video 3 (7040 only)	Enabled	Disabled
5	Loss of Video 4 (7040 Only)	Enabled	Disabled

Alarm Switch Settings (Receiver; Card Version Only)

Switch Position	Alarm Indication	On	Off
1	Loss of Signal	Enabled	Disabled
2	Loss of Video 1	Enabled	Disabled
3	Loss of Video 2	Enabled	Disabled
4	Loss of Video 3 (7040 only)	Enabled	Disabled
5	Loss of Video 4 (7040 Only)	Enabled	Disabled

Note: "Loss of Link" refers to loss of input signal lock. "Loss of Video" refers to loss of the respective input video. "Loss of Signal" refers to the absence of an optical signal.

Indicator LEDs and Alarm Circuitry

The stand-alone box versions of the Pure Digital Fiberlink 7030 and 7040 Series transmission units have integral LEDs that are used to monitor the state of the unit. There are two video LEDs on the 7030 units and four video LEDs on the 7040 units. The LEDs are labeled VID 1, VID 2, VID 3 and VID 4.

The rack card versions of this units have an additional red indicator LED that lights when an alarm condition exists. The rack card unit also provides an output to drive a model 6020A Alarm Sensing Module which provides an audible tone and activates a set of contacts for external signaling purposes.

TRANSMITTER and RECEIVER:

Power: (Green) Indicates that correct power has been applied.

TRANSMITTER:

Video: OFF: Indicates no video detected on input BNC connector
ON: Indicates video detected on input BNC connector

Alarm: ON: Loss of video (rack card only)

RECEIVER:

Video: OFF: Indicates no video detected over fiber and, as a result, no video present on output BNC

ON: Indicates video detected over fiber and, as a result, video present on output BNC

Alarm: ON: Loss of input video or optical signal (rack card only)

OPERATING POINTERS AND TROUBLESHOOTING

Optical Fiber:

The 7030 and 7040 Series are available in versions that operate with most multimode (MM) and single mode (SM) optical fibers. Be certain that the correct size fiber is being used for the particular transmitter/ receiver combination.

Also be certain that the attenuation and bandwidth of the fiber optic cable being used is within the range of the system's loss budget specifications.

Troubleshooting:

Multimode fiber optic cable contains an optical fiber with a light carrying "core" that is only .0025 inches (62.5 microns) in diameter. Single mode fiber optic cable has an even smaller "core", only .00032 to .0004 inches (8-10 microns). This is smaller than a human hair! As a result, any minute particles of dirt or dust can easily block the fiber from accepting or radiating light. Therefore, *cleanliness is imperative!* Always use the dust caps provided with all optical connectors whenever they are exposed to air. Also, it is a good idea to gently clean the tip of an optical connector with a lint-free cloth moistened with alcohol whenever dust is suspected.

The status of any of the indicator LEDs should provide the first clue

as to the origin of any operational failure. Be certain that the input and output signal connections are proper. Due to the number of positions,

Finally, although multimode and single mode devices may look the same, they will not operate properly together. Using the wrong device or fiber can easily add more attenuation than specified, resulting in poor overall performance.

If, after reviewing these possibilities, the system is still not operating, please contact the Customer Service Department for further assistance. (See page 8 for contact information.)

MAINTENANCE

The Pure Digital Fiberlink 7030 and 7040 Series transmission units have been manufactured using the latest semiconductor devices and techniques that electronic technology has to offer. They have been designed for long, reliable and trouble-free service and are not normally field repairable. Should difficulty be encountered, Communications Specialties maintains a complete service facility to render accurate, timely and reliable service of all products.

The only maintenance that can be provided by the user is to ascertain that optical connectors are free of dust or dirt that could interfere with light transmission and that electrical connections are secure and accurate.

All other questions or comments should be directed to our Customer Service Department. It should be noted that many “problems” can easily be solved by a simple telephone call.

LIMITED WARRANTY

Communications Specialties, Inc. (CSI) warrants that for a period of three years after purchase by the Buyer, the Pure Digital Fiberlink 7030 and 7040 Series Transmission Systems will be free from defects

in material and workmanship under normal use and service. A Return Material Authorization (RMA) number must be obtained from CSI at the expense and risk of the Buyer. CSI's Obligation under this warranty will be limited, at its option, to either the repair or replacement of defective units, including free materials and labor. In no event shall CSI be responsible for any incidental or consequential damages or loss of profits or goodwill. CSI shall not be obligated to replace or repair equipment that has been damaged by fire, war, acts of God, or similar causes, or equipment that has been serviced by unauthorized personnel, altered, improperly installed or abused.

RMA numbers and repairs can be obtained from:

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Please have your serial number (located on the top label of the unit) available when contacting us.